

I claim:

1. A coating composition comprising:

- (a) at least one autoxidizable alkoxy silane; and
(b) at least one binder polymer.

2. The coating composition of claim 1,
wherein said binder polymer is an aqueous emulsion polymer.

3. The coating composition of claim 1,
wherein said coating composition comprises 0.01 to 25% by weight of said
autoxidizable alkoxy silane, based on the dry weight of said binder
polymer.

4. The coating composition of claim 1,
wherein said autoxidizable alkoxy silane has the formula
 $\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b}$,
wherein

- (a) R_1 is an organic residue containing at least one
-CH=CHCH₂CH=CH- or -CH=CH-CH=CH- group and
is bound to the silicon via a carbon atom;
(b) R_2 is an organic residue bound to the Si via
a C atom;
(c) R_3 is an organic residue;
(d) "a" is an integer from 1 to 3;
(e) "b" is an integer from 0 to 2; and
(f) the sum of "a" and "b" is an integer from 1 to 3.

5. The coating composition of claim 1,
wherein said autoxidizable alkoxy silane has the formula
 $\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b}$,
wherein:

- (a) R_1 is an organic residue containing at least one
dicyclopentenyl group and is bound to the silicon via a carbon
atom;

- (b) R₂ is an organic residue bound to the silicon via a carbon atom;
- (c) R₃ is an organic residue;
- (d) "a" is an integer from 1 to 3;
- (e) "b" is an integer from 0 to 2; and
- (f) the sum of "a" and "b" is an integer from 1 to 3.
6. The coating composition of claim 1, wherein said binder polymer contains at least one functional group that is autoxidizable or reactive with compounds formed during the oxidation of said autoxidizable alkoxy silane.
7. The coating composition of claim 6, wherein said functional group is a 1,3-dicarbonyl group.
8. The coating composition of claim 7, wherein said 1,3-dicarbonyl functionality is derived from the residue of acetoacetoxyethyl methacrylate.
9. A method for producing a coating on a substrate surface comprising:
- (i) applying to said substrate surface a layer of a coating composition comprising:
- (a) at least one autoxidizable alkoxy silane; and
- (b) at least one binder polymer; and
- (ii) drying said coating composition.
10. The method of claim 9, wherein said binder polymer is an aqueous emulsion polymer.
11. The method of claim 9, wherein said coating composition comprises 0.01 to 25% by weight of said autoxidizable alkoxy silane, based on the dry weight of said binder polymer.
12. The method of claim 9, wherein said autoxidizable alkoxy silane has the formula
- $$\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b},$$
- wherein
- (a) R₁ is an organic residue containing at least one

-CH=CHCH₂CH=CH- or -CH=CH-CH=CH- group and
is bound to the silicon via a carbon atom;

(b) R₂ is an organic residue bound to the Si via
a C atom;

(c) R₃ is an organic residue;

(d) "a" is an integer from 1 to 3;

(e) "b" is an integer from 0 to 2; and

(f) the sum of "a" and "b" is an integer from 1 to 3.

13. The method of claim 9,

wherein said autoxidizable alkoxy silane has the formula
 $\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b}$,

wherein

(a) R₁ is an organic residue containing at least one
dicyclopentenyl group and is bound to the silicon via a carbon
atom;

(b) R₂ is an organic residue bound to the silicon via
a carbon atom;

(c) R₃ is an organic residue;

(d) "a" is an integer from 1 to 3;

(e) "b" is an integer from 0 to 2; and

(f) the sum of "a" and "b" is an integer from 1 to 3.

14. The method of claim 9,

wherein said binder polymer contains at least one functional group that is
autoxidizable or reactive with compounds formed during the
oxidation of said autoxidizable alkoxy silane.

15. The method of claim 9,

wherein said functional group is a 1,3-dicarbonyl group.

16. The method of claim 15,

wherein said 1,3-dicarbonyl functionality is derived from the residue of
acetoacetoxyethyl methacrylate.

17. An autoxidizable silane having the formula $\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b}$,

wherein

- (a) R_1 is an organic residue containing at least one autoxidizable group and is bound to the silicon via a carbon atom;
- (b) R_2 is an organic residue bound to the Si via a C atom;
- (c) R_3 is an organic residue;
- (d) "a" is an integer from 1 to 3;
- (e) "b" is an integer from 0 to 2; and
- (f) the sum of "a" and "b" is an integer from 1 to 3.

10 18. The composition of claim 17,

wherein said autoxidizable group is $-\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}-$ or $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$.

19. The composition of claim 17,

wherein said autoxidizable group is cyclopentenyl.

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